SEARCHING FOR PROGRAMS AND UPDATING VIEWER PREFERENCES WITH REFERENCE TO PROGRAM SEGMENT CHARACTERISTICS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] Embodiments of the invention relate to providing information about television programs to television viewers, and more particularly to interactive program guides, interactive program banners, and related features.

[0003] 2. Background Technology

[0004] In the era of broadcast television and analog cable television, viewers used printed listings to find the times and channels of television programs. Later, cable system operators began to provide channels dedicated to showing program listings. These listings were conventionally referred to as electronic program guides or EPGs. EPGs were typically presented as a passively scrolling grid in which each row showed the current and upcoming programs available on a particular channel. The scrolling grid was generated by a computer program using program guide data supplied by one of a handful of sources such as Tribune Media or TV Guide. While this type of program guide was useful it also had many shortcomings. For example, a viewer who wished to see the listings for a particular channel might be forced to wait several minutes while the guide slowly scrolled through other channels before arriving at the channel of interest. Further, the guide only displayed listings for a narrow window of time, typically 90 minutes, and so a viewer was unable to see listings for a later part of the day.

[0005] Subscribers to newer digital television services such as digital cable and satellite television use digital video receiver devices with data processing and storage capabilities. The processing capabilities of these devices has enabled the deployment of enhanced program guide technologies commonly referred to as interactive program guides or IPGs. IPGs present a graphical user interface that the viewer uses to actively navigate through a database of program listings. **FIG. 1** shows an example of a conventional interactive program guide. The guide **12** is displayed in the viewing area **10** of a video display device such as a television in response to a display command from a remote control. The guide **12** is typically comprised of a grid **14** in which individual programs **16** are listed by channel **18** and time **20**. The user may navigate through the programs in the grid using the keys of the remote control. This typically involves directing the movement of a cursor that highlights the field of the particular program on which it is located (e.g. the program "Business Day" in **FIG. 1**). By moving the cursor up and down the viewer may scroll through the channels listed in the grid. The guide typically scrolls by a row or a page when the user attempts to go past the top or bottom of the displayed rows, and most guides provide page up and page down functions, operated for example by pressing the channel up or channel down key on the remote control. Similarly, by moving the cursor to the right, the viewer may scroll forward in time to view future program listings. The guide typically shifts by one column or one page when the user attempts to go past the right-most column, and most guides provide page right and page left functions, operated for example by pressing fast forward and rewind keys or other designated keys on the remote control. Some guides also enable the user to scroll backward to listings for programs that have already aired.

[0006] When the viewer locates the cursor on the field of a particular program, information about that program is displayed in a program window portion **22** of the guide. This information typically includes the title of the program **24** and a description of the program **26**.

[0007] The guide may also enable the viewer to take a number of actions with respect to a particular program. For example, the viewer may tune directly to a current program by navigating the cursor to that program and then pressing a select key on the remote control, and may record a current program by navigating the cursor to that program and then pressing a record key. Similarly, for a future program, the viewer may directly schedule actions from the guide such as recording of the program or generation of a reminder when the program is about to air. The guide may also enable the user to update viewing preferences stored in a viewer profile by indicating that the viewer is interested or disinterested in programs having characteristics similar to those of a program currently highlighted in the guide. Actions such as scheduling and indication of viewer preferences are usually performed using dedicated keys of a remote control.

[0008] Interactive program guides also typically provide various customization functions. For example, the specific channels displayed by the guide may be customized from a list of all possible channels. The guide may also be filtered to display only those programs having specified characteristics, such as a specified genre (e.g. sports, news, movie), rating (e.g. children, mature) or other feature such as the availability of closed caption data or alternate language audio.

[0009] Another type of interactive feature typically provided by digital video receiver devices is an interactive program banner. **FIG. 2** shows an example of a conventional interactive program banner. The banner **28** is typically displayed over the image of the program currently being viewed, and typically includes information about the program including the name and time **30** of the program being viewed and descriptive information **32** about the program being viewed. The program banner is typically displayed upon changing the channel, and may also be displayed in response to user operation of an information key or other key on the remote control.

[0010] An example of the type of data used to generate conventional interactive program guides and program banners is illustrated in **FIG. 3**. This data, referred to herein as program metadata, provides information concerning various aspects of the program, such as a program identifier, the program title, program type, program genre, a description of the program series, a description of the subject matter of the particular episode, the channel, time and duration of the program, a program content rating, and other information such as language, alternate audio, closed caption, and audio type. In some instances additional data may be included such as keywords that are descriptive of the program subject matter.

[0011] What is notable about the conventional program metadata for purposes of this disclosure is that it treats the whole program as the fundamental unit of programming